

WHAT IS CLAIMED IS:

1. A method for navigating a collection of tree data structures stored in a computer-readable database, the method comprising:

5 constraining a first node of a query tree stored in a computer-readable memory to a first value;

making accessible a first set of nodes of the query tree that are connected to the first node constrained to the first value;

constraining a second node in the first set of nodes to a second value;

10 identifying a tree in the collection of tree data structures that contains (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value; and

accessing data in a select node of the identified tree.

15 2. The method of Claim 1 wherein the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree.

3. The method of Claim 1 further comprising:

20 making accessible a second set of nodes of the query tree that are connected to the second node constrained to the second value.

4. The method of Claim 3 wherein the select node is equal in position to the first node of the query tree, the second node of the query tree, or a node in the accessible first or second sets of nodes of the query tree.

5. The method of Claim 1 wherein the first value and the second value are selected from the group consisting of a data value, an unbound special value, and an undefined special value.

6. The method of Claim 1 wherein a structure of the query tree is determined by available tree structures in the collection of tree data structures.

7. In a computer system having a graphical user interface including a display device and one or more input devices, a method for navigating a collection of tree data structures stored in a computer-readable database, the method comprising:

receiving a first value from the one or more input devices to which a first node of a query tree stored in a computer-readable memory is constrained;

displaying with the display device a first set of nodes of the query tree that are connected to the first node constrained to the first value;

identifying a tree in the collection of tree data structures that contains a first matching node equal in position to the first node and equal to the first value; and

displaying with the display device data in a select node of the identified tree.

8. The method of Claim 7 wherein the select node is the first matching node or a node connected to the first matching node of the identified tree.

9. The method of Claim 7 further comprising:
5 receiving a second value from the one or more input devices to which a second node in the first set of nodes is constrained; and
displaying with the display device a second set of nodes of the query tree that are connected to the second node constrained to the second value.

10 10. The method of Claim 9 wherein identifying the tree identifies a tree in the collection of tree data structures that contains (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value.

15 11. The method of Claim 10 wherein the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree.

20 12. The method of Claim 9, wherein identifying the tree identifies a plurality of trees in the collection of tree data structures that contain (1) a first matching node equal in position to the first node and equal to the first value, and (2) a second matching node equal in position to the second node and equal to the second value, and wherein displaying the data in the select node displays data in a plurality of select nodes of each of the identified plurality of trees.

13. The method of Claim 12 wherein each of the plurality of select nodes are the first matching node, second matching node, or a node connected to the first or second matching nodes of the respective identified trees.

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14. The method of Claim 12 wherein each of the plurality of select nodes are equal in position to the first node of the query tree, the second node of the query tree, or a node in the first or second sets of nodes of the query tree.

10 15. The method of Claim 12 wherein displaying the data in the plurality of select nodes displays, with the display device, the data of the plurality of select nodes in a tabular format.

15 16. The method of Claim 12 further comprising:
displaying the query tree in a constraint pane,
wherein the displaying of the first set of nodes is displayed in the constraint pane,
wherein the displaying of the second set of nodes is displayed in the constraint
pane, and
wherein the displaying of the data in the plurality of select nodes displays the data
20 in a data pane.

17. The method of Claim 9 wherein the first value and the second value are selected from the group consisting of a data value, an unbound special value, and an undefined special value.

5 18. The method of Claim 7 wherein a structure of the query tree is determined by available tree structures in the collection of tree data structures.

19. A system for navigating a collection of tree data structures, the system comprising:

10 a database component operative to maintain a database of tree data structures;

a memory component operative to store a query tree;

an input component;

a display component; and

a processing component communicatively connected to the database component,

15 the memory component, the input component, and the display component, the processing component programmed to perform actions comprising:

interpreting a first signal from the input component as an instruction to

constrain a first node of the query tree to a first value;

constraining the first node of the query tree to the first value;

20 transmitting an instruction to the display component to display a first set

of nodes of the query tree that are connected to the first node

constrained to the first value;

communicating with the database component to identify a tree in the
database of tree data structures that contains a first matching node
equal in position to the first node and equal to the first value; and
transmitting an instruction to the display component to display data in a
5 select node of the identified tree.

20. The system of Claim 19 wherein the select node is the first matching node
or a node connected to the first matching node of the identified tree.

10 21. The system of Claim 19 wherein the processing component is
programmed to perform actions further comprising:
interpreting a second signal from the input component as an instruction to
constrain a second node in the first set of nodes to a second value;
constraining the second node to the second value; and
15 transmitting an instruction to the display component to display a second set of
nodes of the query tree that are connected to the second node constrained to the second value,
wherein communicating with the database component communicates with the
database component to identify a tree in the database of tree data structures that contains (1) a
first matching node equal in position to the first node and equal to the first value, and (2) a
20 second matching node equal in position to the second node and equal to the second value.

22. The system of Claim 21 wherein the select node is the first matching node, the second matching node, or a node connected to the first or second matching nodes of the identified tree.

5 23. The system of Claim 21 wherein the select node is equal in position to the first node of the query tree, the second node of the query tree, or a node in the first or second set of nodes of the query tree.

24. The system of Claim 21 wherein the first value and the second value are
10 selected from the group consisting of a data value, an unbound special value, and an undefined special value.

25. The system of Claim 19 wherein a structure of the query tree is
determined by available tree structures in the collection of tree data structures.

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